Technology for the next 25 Years with the UNI Metal Casting Center

University of Northern Iowa
Additive Manufacturing
in Metal Casting

Additive Manufacturing in Metal Casting

- **The new initiative will be operated under the direction of the UNI Metal Casting Center**
- **Equipment has the largest printable area available in any 3D printer in North America and can produce molds for virtually any metal alloy**

Additive Manufacturing in Metal Casting

- **Operation of the printer will allow UNI to:**
  - **Participate in advanced technology funded programs**
  - **Provide students with cutting edge education experience**
  - **Remain primarily self supporting**

Additive Manufacturing in Metal Casting

Located off Campus at the Cedar Valley TechWorks, Waterloo, IA

Additive Manufacturing in Metal Casting

- **Supports UNI collaboration with :**
  - **National Additive Manufacturing Innovation Institute (NAMII)**
  - **National Center for Defense Manufacturing & Machining (NCDMM)**
  - **American Metal Casting Consortium**
  - **American Foundry Society**
  - **Steel Founders Society of America**
  - **Benet Laboratories**
  - **Rock Island Arsenal**

Additive Manufacturing in Metal Casting

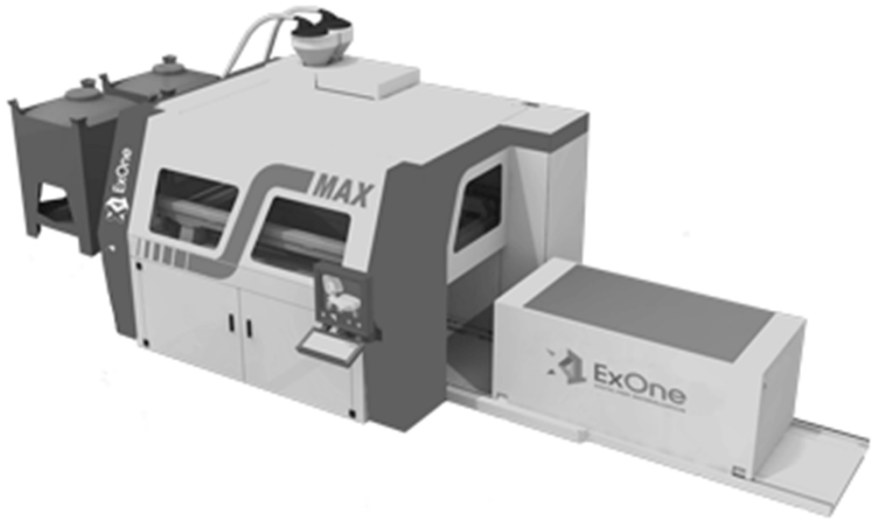
- **Provides ability to support Iowa Manufacturers including :**
  - **Deere & Company**
  - **Rockwell Collins**
  - **Vermeer Manufacturing**
  - **Viking Pump**
  - **Sivyer Steel**
  - **Caterpillar**
  - **Northern Iowa Diecasting**
  - **Wellman Dynamics Fansteel**
  - **Boeing, McDonald Douglas, etc.**
  - **Many other Iowa Manufacturers**

Additive Manufacturing in Metal Casting

- **First year plans include :**
  - **Three high level demonstration projects with Iowa Companies**
  - **Land based titanium casting project with Rock Island Arsenal**
  - **Service Center producing printed molds for regional businesses**

Purchased Equipment

- ExOne S-Max Printer ($1.5m)
- Build Volume (WxDxH): 1800 x 1000 x 700 mm (70 x 39 x 27 in.)
- Furan binder system (low risk)
- Build Speed = 0.032ft^3/ 38 sec – 331 lbs / hour
- Available within 30 days*



www.**youtube**.com/watch?v=UtlQBXC2vsk\

Questions?